AgileWeb!

Introduction

AgileWeb! for AirVision™ fulfills three roles for air quality data:

- AgileWeb provides a detailed public information system by which residents can see real-time air quality data on a map (Figure 1) and in AQI tables. Viewers can also review historical air quality data through easy to generate reports and graphs.

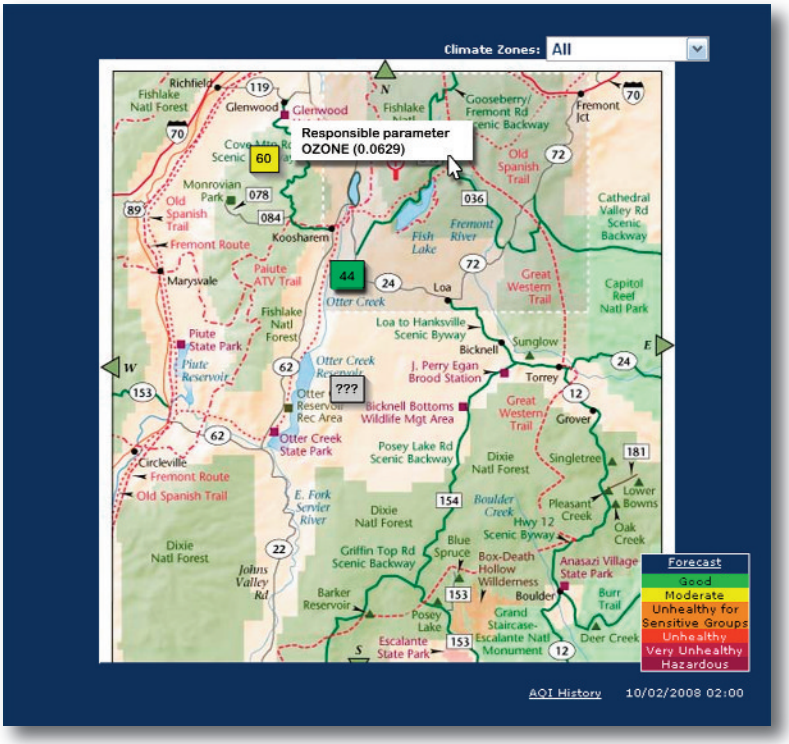


Figure 1 Central real-time map with mouse rollover showing responsible pollutant

- AgileWeb offers an optional password-protected web interface for users outside the normal monitoring group to perform common functions, such as entering AQI forecasts and editing/approving data (for example, lab data or air toxics).
- Most importantly, AgileWeb offers a full two-way system for importing and exporting AQS data in both text and XML 2.0 format. AgileWeb allows interface to NEIEN (National Environment Internet Exchange Network) exchange nodes and can pro-

vide data to entities that may not have access to an Exchange Node. AgileWeb is unique in this capability from other web interfaces to data management systems.

System Requirements

Minimum requirements for installing AgileWeb are:

- Web Server (Microsoft XP / Server 2000 / Server 2003)
- Microsoft Internet Information Server, .NET 3.5, ASP.NET 2.0.5727
- LAN Connection to AirVision database server
- Microsoft Internet Explorer 6.0 and up or FireFox version 3.0 and up
- Image files for primary map overlay, site-specific
- Microsoft requires one user license for each web site visitor, so that a Processor License (Workstation or better) is recommended for AirVision servers using AgileWeb.
- SSL (Secure Sockets Layer) certificate for local server.

Installing AgileWeb

1. Agilaire will provide a zip file with the files you need to install AgileWeb. Create a directory on your server and copy the zip file into that folder. It will unzip itself.

2. On your server, open **Administrative Tools**. The screens will vary depending on whether you're using Windows Server 2003 or Windows Server 2008.

3. From Administrative Tools select **Internet Information Services (IIS) Manager**. All your web sites will be listed.

4. Return to the **IIS Manager**, right-click **Application Pool** and select **New > Application Pool**.

5. In the **Add New Application Pool** screen, enter an **Application Pool ID**, e.g., AgileWeb, and click **OK**.

6. From Internet Information Services right-click either **your website** or **Default Web Site**. Select **New > Virtual Directory**.

7. The **Virtual Directory Wizard** lets you create a new virtual directory on the web site. Click **Next** in the first screen.

8. The second screen in the wizard requires you to enter an **Alias**. The alias is the name that will be used to gain access to this web virtual directory. Use the same naming conventions you would use for any directory. The name you enter here will be the last name in the path to the virtual directory (e.g., C:\TN AgileWeb\AgileWeb). Click **Next** after you enter an alias.

9. In the third screen of the Virtual Directory Wizard, browse to enter the **path to the directory** where you copied the AgileWeb zip file. This folder is where your web site content will be. Click **Next**

10 In the fourth screen, check the following **Access Permissions**: **Read**, **Run scripts**, and **Write**. Click **Next**.

11. The fifth screen says "You have successfully completed the Virtual Directory Creation Wizard." Click **Finish**.

12. Return to the **IIS Manager**, right-click **your virtual directory,** and select **Properties**.

13. Still in the **Properties** screen of your virtual directory, select the **Document** tab and enter a **Default Content Page**, e.g., AgileWeb.html. The default content page is the page that will be called in the iFrame of your agency's web site.

14. Still in the Properties screen of your virtual directory, select the **Directory Secuirty** tab. In the **Authentication and access control** section of the screen, click **Edit**. In the **Authentication Methods** screen, select **Enable anonymous access**.

15. Still in the Properties screen of your virtual directory, select the **ASP.NET** tab and check your ASP.NET version to confirm it is 2.0. If it is not a 2.0 release, select 2.0 from the drop-down list. Click **OK**.

16. In the **IIS Manager**, open your virtual directory and right-click the **Login**. folder. Select the **Directory Security** tab.. In the **Secure communications** section of the screen, click **Edit**. Select **Require Secure Chanel (SSL)**. You will need a **certificate for SSL** so login name and password can be encrypted. See the Appendix at the end of this document for more information about SSL

18. Next locate the file **Web.config** on your server in the directory with your web files, for example, \\MY_SERVER\WebProjects\AgileWeb.Web.config is a text file, so you can open it in **Notepad** or **WordPad**.

19. In web.config, set the connection string. First, search for **<connectionString>** (Press **Ctl-f** or select **Find** from the **Edit** menu and enter **<connectionStriing>**). Enter ONLY ONE of the connection strings described below. Substitute the name of your server for "MY_SERVER."

- This connection string requires a **username** and **password**:

  <add name="AVDataConnectionString" connectionString="Data Source=MY_SERVER;Initial Catalog=AVData; User Id=username; Password=SomePassword; providerName="System.Data.SqlClient"/>

- This connection string uses **Active Directory Authentication**:

  <add name="AVDataConnectionString" connectionString="Data Source=MY_SERVER;Initial Catalog=AVData;Integrated Security=True" providerName="System.Data.SqlClient"/>.

20. Next, under **<appSettings>** enter the **path to the image of your map**. The path is relative to the website root folder, for example:

<add key="mapPath" value="images\CoveMtnMap.jpg"/>

21. Still in **<appSettings>**, set the **MapDataTimeOffset**. The first number will be the number of hours subtracted from the curent time and the second number will be the number of minutes. The MapDataTimeOffset is necessary to allow time for real-time data to be retrieved. A typical setting would be

<add key="MapDataTimeOffset" value="1,5"/>

where one hour and five minutes is subtracted from the current time.

22. Select **File>Save** in the Web.config file and close.

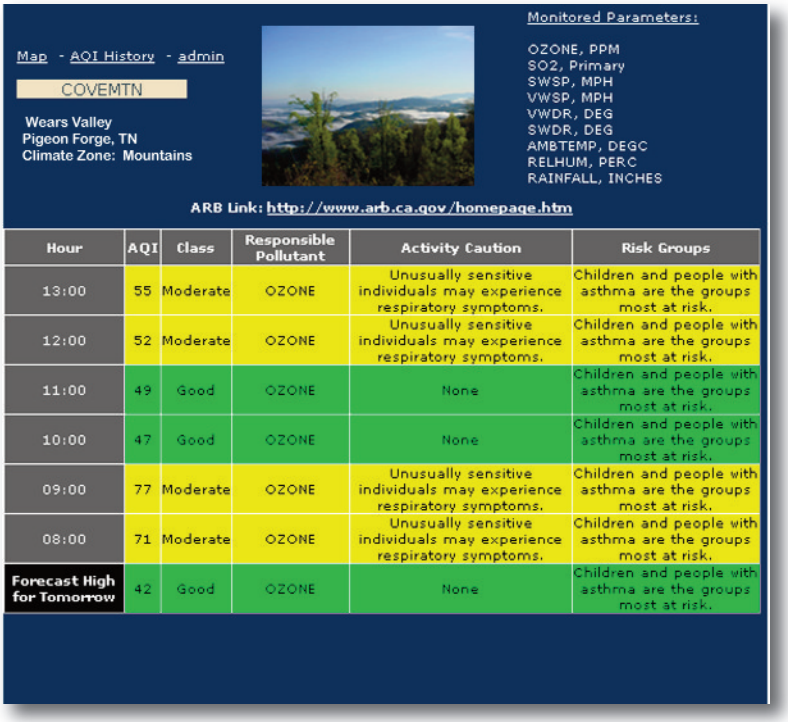
Administrative personnel who log in to your website will need a login name and a password. In order for login names and passwords to be encrypted, you will need an SSL (Secure Sockets Layer) Certificate for each computer. See the Appendix at the end of this document for more information about SSL.

Using the Public Web Site

A central map of the monitored state/region (Figure 1) within the AgileWeb site provides the public with a real-time view of air quality conditions in the district. This AgileWeb independent web control can be placed in a frame or iframe inside the agency's web page. (HTML frames allow web developers to present documents in multiple views, which may be independent windows or subwindows. An iframe is a type of frame that allows web developers to specify exactly where in the page a window will show up, so they can pick a rectangular region on a page and call another website or web application inside it.) The agency's administrator defines the header and sidebar navigation. The map is overlaid on any standard .BMP or JPG file, supplied by the user.

Each site on the map is shown with an associated box displaying the most recent hour's AQI value. The background color of the box is based on the EPA AQI standard (e.g., green=good, yellow=moderate, etc.). A mouse rollover of the site area reveals the responsible pollutant and concentration (e.g., "responsible pollutant: particulate matter 2.5 um or smaller," or "responsible pollutant: ozone, 8-hour average"). If values are unavailable for a particular site, the box for that site will be gray with the AQI value displayed as "???" and the mouse rollover will say "Data not available."

Clicking on a site box will bring up the AQI Site Specific Display Report (Figure 2), which displays a photograph of the site, the site name and address, a list of the monitored parameters, a link to the agency homepage, and a table displaying values for the current day (up to the current hour) and tomorrow's forecast. Hours are in rows; column headers are Hour, AQI, Class, Responsible Pollutant, Ac-



Hour	AQI	Class	Responsible Pollutant	Activity Caution	Risk Groups
13:00	55	Moderate	OZONE	Unusually sensitive individuals may experience respiratory symptoms.	Children and people with asthma are the groups most at risk.
12:00	52	Moderate	OZONE	Unusually sensitive individuals may experience respiratory symptoms.	Children and people with asthma are the groups most at risk.
11:00	49	Good	OZONE	None	Children and people with asthma are the groups most at risk.
10:00	47	Good	OZONE	None	Children and people with asthma are the groups most at risk.
09:00	77	Moderate	OZONE	Unusually sensitive individuals may experience respiratory symptoms.	Children and people with asthma are the groups most at risk.
08:00	71	Moderate	OZONE	Unusually sensitive individuals may experience respiratory symptoms.	Children and people with asthma are the groups most at risk.
Forecast High for Tomorrow	42	Good	OZONE	None	Children and people with asthma are the groups most at risk.

Figure 2 AQI site-specific display report, accessed by clicking a site box in the map, showing tomorrow's forecast

tivity Caution, and Risk Groups. The bottom row displays the Forecast High for Tomorrow as configured by an administrator in the Forecast Editor (Figure 12).

The central map also includes a drop-down list that can be used to grup sites, climate zones, regions, etc. When a climate zone is selected the AQI will be displayed only for sites in that zone. The selection list of climate zones begins with **All Sites** and is followed by a list of zones configured by administrative personnel, for example “Coastal,” “Eastern,” or “Northern.”

A color coded forecast legend below the map provides a link to the AQI ???forecast as an overlay table (Figure 3) with color-coded AQI values for all sites in the district. The forecast table displays AQI values for pollutants, a description of the health effect level, activity caution, groups at risk, and tomorrow’s forecast. Click on a site in the overlay AQI table to see a site specific AQI table (Figure 2).

The time of the latest map update below the map displays the ending time of the current average. Data up to 59 minutes after the hour will be displayed as the next hour (e.g., 2:59 is shown as 3:00).

The **AQI History link** below the map takes viewers to AQI history reports (Figure 4).

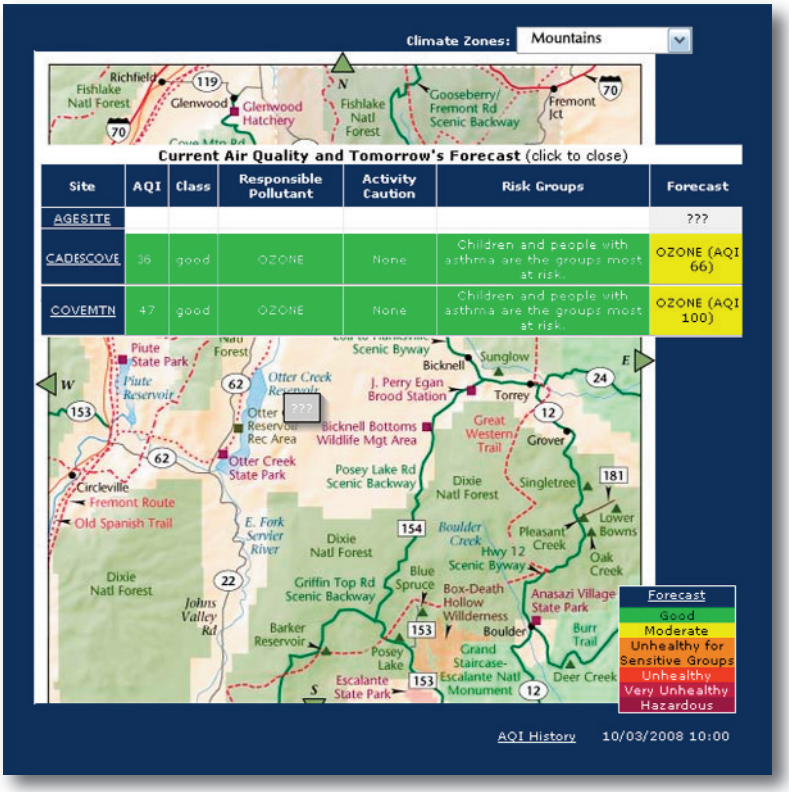


Figure 3 AQI forecast overlay table, accessed by clicking the color legend on the map

- ***Note:*** The administration screen cannot be accessed directly from the map screen. You must first select the AQI History link in the map screen to log into the admin menu with an administrative password.

Historical Reporting

Viewers can access historical data via the **AQI History** link at the bottom of the real-time map (Figure 1). The **Data Reports** screen (Figure 4) allows the public to query historical AQI data for any sites and parameters that are configured in AirVision.

Data Average Interval is selected from a drop-down list. When an average interval is selected, only the parameters configured in AirVision with that average interval will be listed in the **Select Parameters** window.

Beginning and ending dates can be selected on calendars or entered in the **Date** fields. Click the arrows on the calendars to go to preceding or succeeding months.

AgileWeb calculates parameter values for 8-hour ozone for **Average Data**; **Sample Data** reports can be displayed.

AQI Values can be reported as:

- **HTML** tables (Figure 5)
- **Graphs** (Figure 6)
- **CSV** (Excel) files (Figure 7)
- **XML** files according to the EPA AQS / XML schema (Figure 8) or
- **Text** files (Figure 9).

XML and Text reports are displayed for hourly averages only.

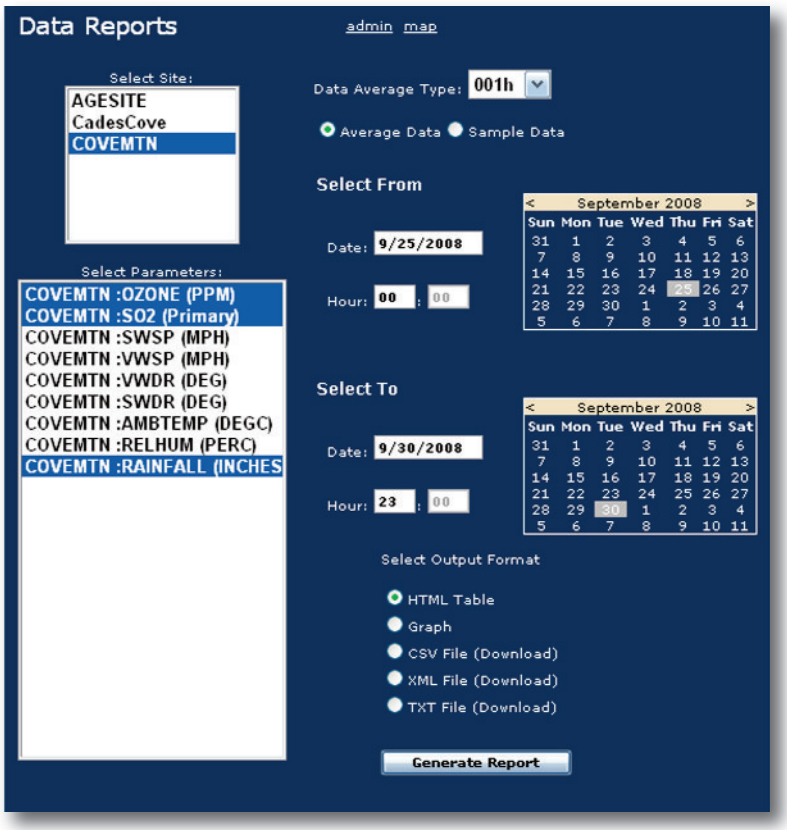


Figure 4 AQI History Report selection screen (query form)

From the links at the top of the Data Reports selection screen, viewers can return to the map (Figure 1) and administrative personnel can access the **Administration** menu (Figure 10) by logging in with the administrative password configured in AirVision.

From the HTML report (Figure 5) you can Export data to an Excel file. If you click **Excel Export** a pop-up box will ask you to designate a location for the file. The **Flag Legend** button takes you to a list of flags, for example **<** Invalid, **C** Calibration, **M** Maintenance.

Average 001h	COVEMTN :OZONE(PPM)	COVEMTN :SO2(Primary)	COVEMTN :RAINFALL(INCHES)
09/25/2008 12:00	0.033113989	0.031166878	0
09/25/2008 01:00	0.071228212	0.031152846	0
09/25/2008 02:00	0.163274327	0.03116727	0
09/25/2008 03:00	0.252424564	0.031147581	0
09/25/2008 04:00	0.337287762	0.031133716	0
09/25/2008 05:00	0.416539661	0.031155704	0
09/25/2008 06:00	0.48894356	0.031139961	0
09/25/2008 07:00	0.553369622	0.031116604	0
09/25/2008 08:00	0.608812498	0.03116028	0
09/25/2008 09:00	0.654407021	0.031136928	0
09/25/2008 10:00	0.689441705	0.031117798	0
09/25/2008 11:00	0.267210472 D>	0.09357152 D>	0
09/25/2008 12:00	0.072581805	0.123430416	0
09/25/2008 01:00	0.072659209	0.123807176	0
09/25/2008 02:00	0.071567982	0.124625839	0
09/25/2008 03:00	0.069325156	0.125548869	0
09/25/2008 04:00	0.065965734	0.126546323	0
09/25/2008 05:00	0.061542138	0.126739263	0
09/25/2008 06:00	0.05612339	0.126203	0
09/25/2008 07:00	0.049794051	0.126035854	0
09/25/2008 08:00	0.042652893	0.125832796	0
09/25/2008 09:00	0.034811344	0.125848159	0
09/25/2008 10:00	0.02639177	0.125866189	0
09/25/2008 11:00	0.017523536	0.125768721	0
09/26/2008 12:00	0.001070441	0.125798821	0
09/26/2008 01:00	0.009365024	0.12569727	0

Figure 5 Tabular display with flags (HTML)

You can right-click on an AQI graph (Figure 6) to save it as a jpeg. The **File Name** defaults to GraphData.ashx. Select the folder where you want the image saved and change the **ashx** extension to **jpg,** e.g., GraphData_10_1_08.jpg.

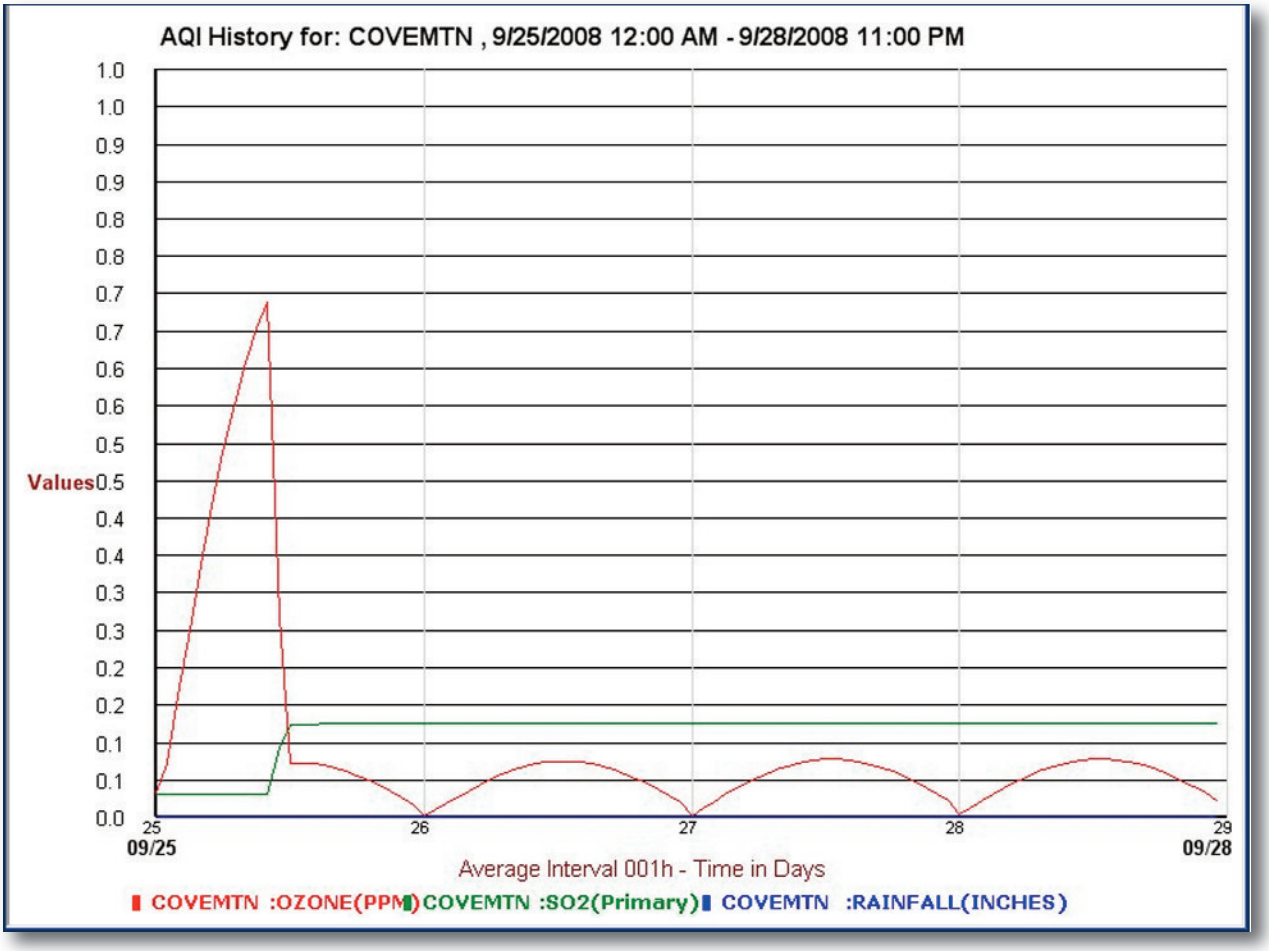


Figure 6 Graph of hourly data

When you select **CSV File (Download)** and click **Generate**, you can choose whether to open the report in Microsoft Office Excel (Figure 7) or save it to a file.

	A	B	C	D	E
1	Date	Time	COVEMTN :OZONE(PPM)	COVEMTN :SO2(Primary)	COVEMTN :RAINFALL(INCHES)
2	9/25/2008	12:00	0.033113989	0.031166878	0
3	9/25/2008	1:00	0.071228212	0.031152846	0
4	9/25/2008	2:00	0.163274327	0.03116727	0
5	9/25/2008	3:00	0.252424564	0.031147581	0
6	9/25/2008	4:00	0.337287762	0.031133716	0
7	9/25/2008	5:00	0.416539661	0.031155704	0
8	9/25/2008	6:00	0.48894356	0.031139961	0
9	9/25/2008	7:00	0.553369622	0.031116604	0
10	9/25/2008	8:00	0.608812498	0.03116028	0
11	9/25/2008	9:00	0.654407021	0.031136928	0
12	9/25/2008	10:00	0.689441705	0.031117798	0
13	9/25/2008	11:00	0.267210472 D>	0.09357152 D>	0
14	9/25/2008	12:00	0.072581805	0.123430416	0
15	9/25/2008	1:00	0.072659209	0.123807176	0
16	9/25/2008	2:00	0.071567982	0.124625839	0
17	9/25/2008	3:00	0.069325156	0.125548869	0
18	9/25/2008	4:00	0.065965734	0.126546323	0
19	9/25/2008	5:00	0.061542138	0.126739263	0
20	9/25/2008	6:00	0.05612339	0.126203	0
21	9/25/2008	7:00	0.049794051	0.126035854	0
22	9/25/2008	8:00	0.042652893	0.125832796	0
23	9/25/2008	9:00	0.034811344	0.125848159	0
24	9/25/2008	10:00	0.02639177	0.125866189	0
25	9/25/2008	11:00	0.017523536	0.125768721	0
26	9/26/2008	12:00	0.001070441	0.125798821	0
27	9/26/2008	1:00	0.009365024	0.12569727	0
28	9/26/2008	2:00	0.018569635	0.12564364	0
29	9/26/2008	3:00	0.027484659	0.125754833	0
30	9/26/2008	4:00	0.035970978	0.125565111	0
31	9/26/2008	5:00	0.043896168	0.125563576	0
32	9/26/2008	6:00	0.051136557	0.125528439	0

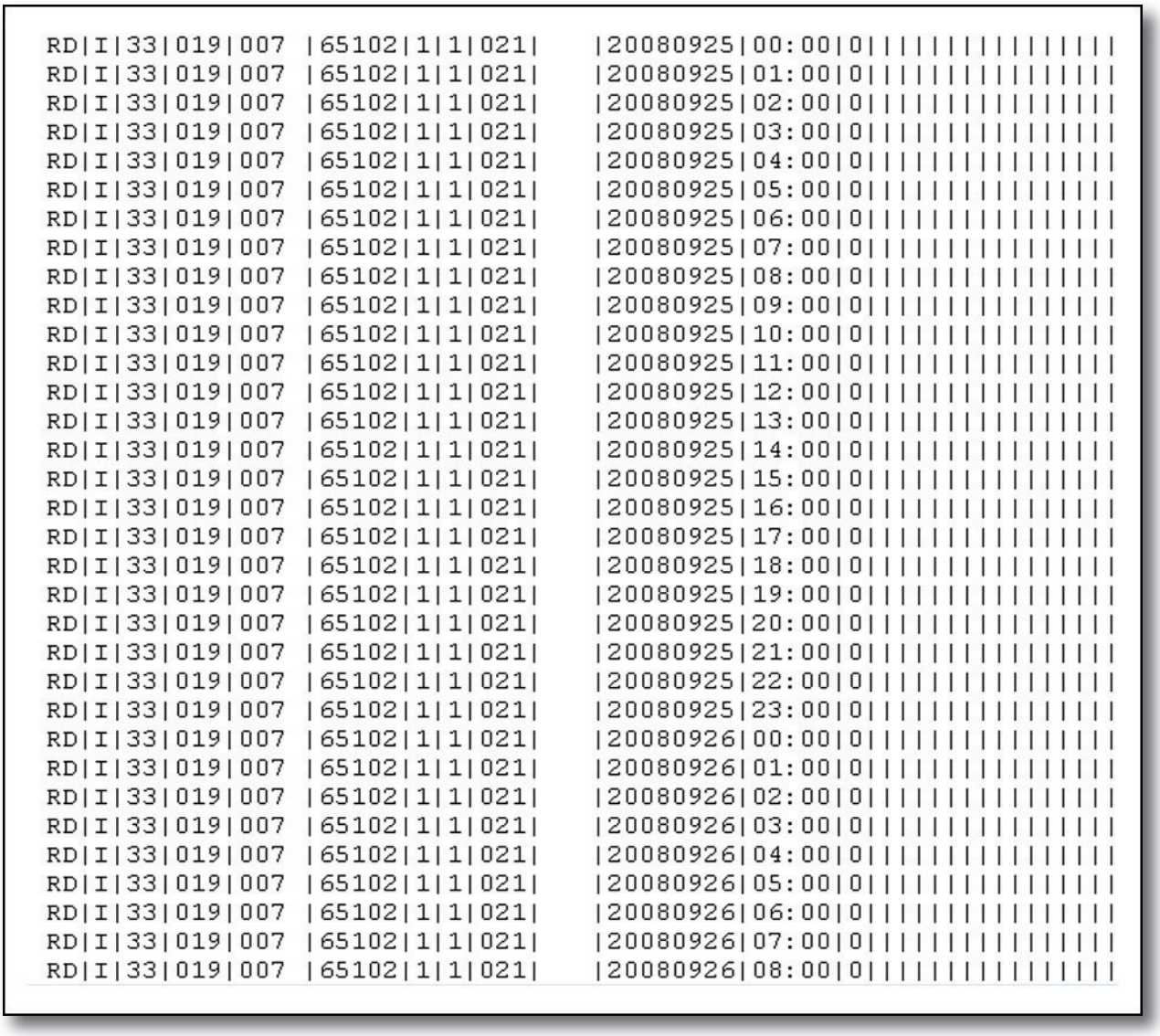
.csv]report(1)

Figure 7 AQI history report in Excel (CSV) format

When you select **XML File (Download)** and click **Generate**, you can choose whether to open the report in an Internet browser (Figure 8) or save it to a file.

Figure 8 AQS/XML report

When you select **TXT File (Download)** and click **Generate**, you can choose whether to open the report in Notepad (Figure 9) or save it to a file.



```
RD|I|33|019|007 |65102|1|1|021|   |20080925|00:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|01:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|02:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|03:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|04:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|05:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|06:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|07:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|08:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|09:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|10:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|11:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|12:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|13:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|14:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|15:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|16:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|17:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|18:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|19:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|20:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|21:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|22:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080925|23:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080926|00:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080926|01:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080926|02:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080926|03:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080926|04:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080926|05:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080926|06:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080926|07:00|0|||||||||||||||||
RD|I|33|019|007 |65102|1|1|021|   |20080926|08:00|0|||||||||||||||||
```

Figure 9 AQI report in Text format

Using the Private Website

Administrative personnel can log into the **Administration** menu, with the same administrative password that is configured in AirVision, via the AQI History Report screen (Figure 4) or the Site-specific Forecast display (Figure 2). (AgileWeb asumes that this web page is provided in a password-protection of the web site and access is controlled by the website administrator.) From the **Admin Menu** screen administrators can access **Web Display Editors** to configure the web site, **Data Editors**, and **Data Import** tools.

Administrative Menu

When you click the **admin** link in the AQI Data Reports screen (Figure 4) or the Site-Specific Forecast display (Figure 2) you will see a login screen. You must log in with an administrative **User Name** and **Password**. The administrative menu (Figure 10) consists of links to Web Display Editors (**Site Editor** and **Forecast Editor**), Data Editors (**Data Editor** and **PARS Editor**), and **Data Import** (for importing AQS 2.0 CSV files and lab data.

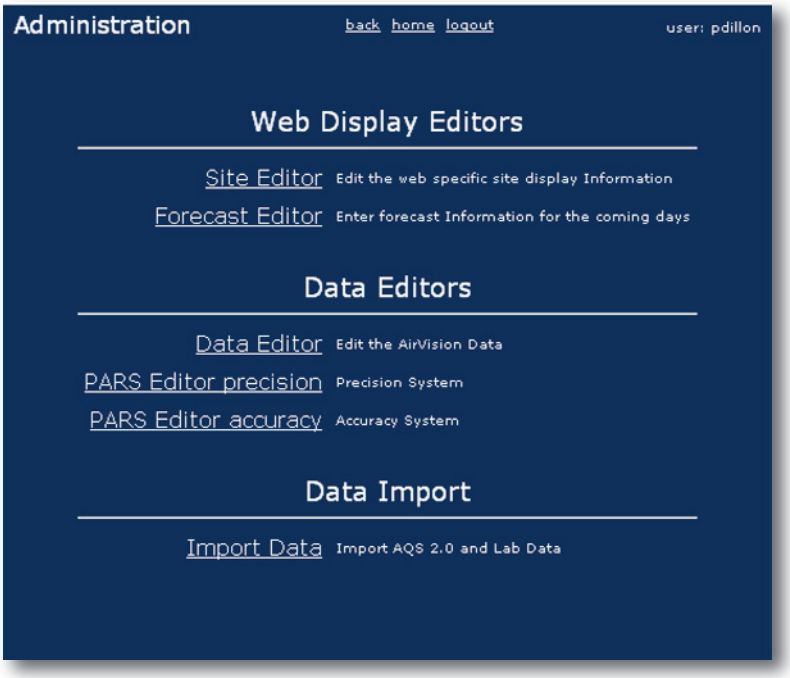


Figure 10 Administration menu

Site Editor

The purpose of the Site Editor is to configure details specific to the web site. The AgileWeb site editor uses sites already set up through AirVision. To make changes in the Site Editor (Figure 11), first select a **Site** from the table. That site's information will be displayed below the table:

The **X** and **Y** fields in the Site Editor (Figure11) allow you to configure the X/Y location of a site box on the map (e.g., X=390, Y=392). The site boxes on the map (Figure 1)) indicate the location of the sites and the current AQI values for that site; site boxes also provide a link to the site-specific display report (Figure 2).

The **Site Image Path** is the path to the photograph of the site displayed in the site-specific forecast screen (e.g., ~/images/stationImages/Covemtn.jpg). Web images must be stored in the website for security.

The **Climate Zone** entered in the Site Editor determines the climate zones or regions in the drop-down list on the map and which site boxes are displayed on the map when that climate zone is selected from the drop-down list.

The **ARB link** configured in the Site Editor will appear in the site-specific forecast and provide a link to the agency's home page.

To enable the sites to be displayed on the map (Figure 1) and in the AQI History Report selection screen (Figure 4), click the **Display** check box, then click **Update**.

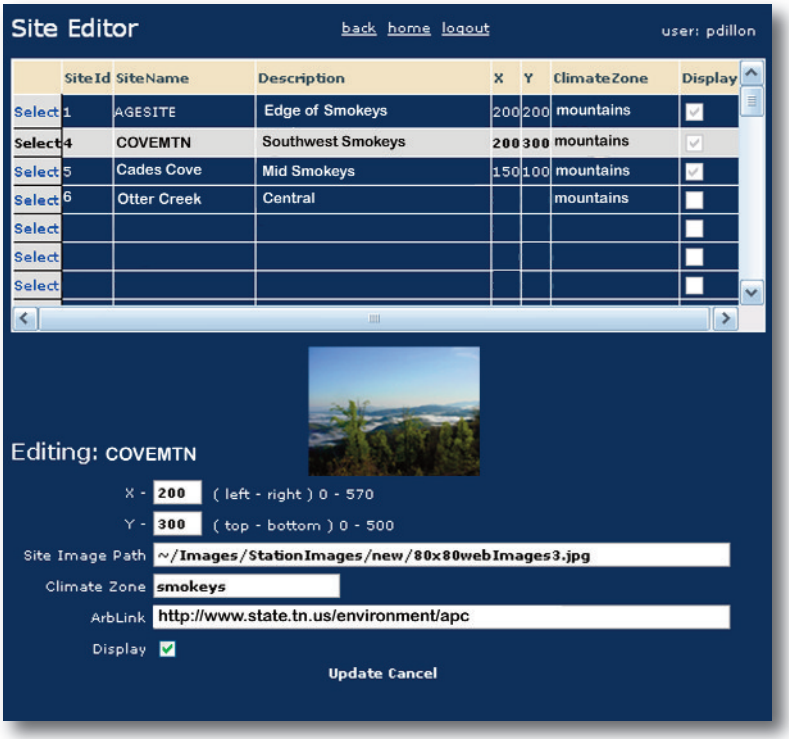


Figure 11 Site Editor

Forecast Editor

The Forecast Editor (Figure 12) allows administrative personnel to post an AQI forecast for public viewing. After logging into the **Admin** menu, select **Forecast Editor** from the web display editors. Select a starting date from the calendar (default is today), then for each of the days displayed in the tables select a **Site Name**, enter a **Concentration** value, and select a **Pollutant** from the drop-down list. When you click **Save Forecast Information** the appropriate color coded AQI value for each site will be displayed in the right column of the tables. Color coded AQI values will also be displayed in the AQI site-specific (Figure 2) and the AQI Forecast (Figure 3) displays, which are accessed from the central map.

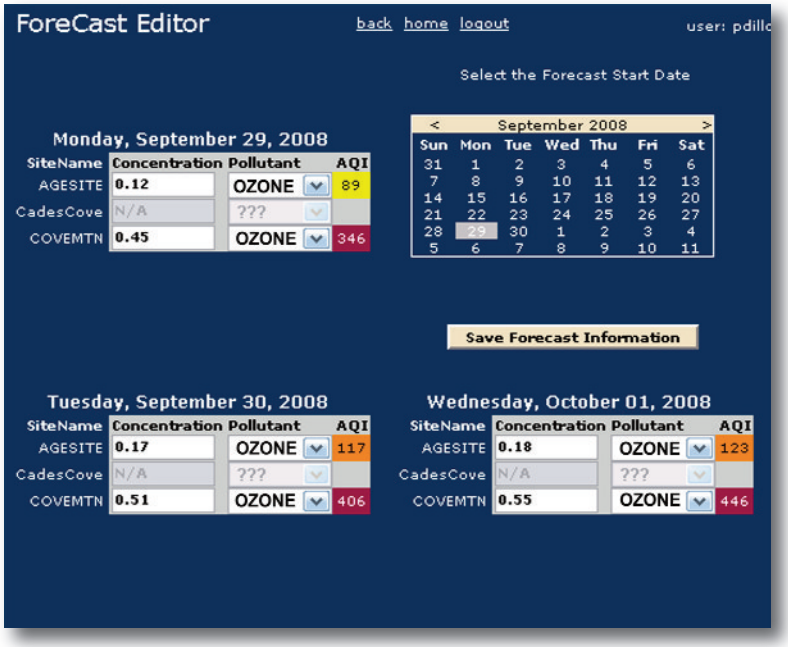


Figure 12 Forecast Editor

Data Editor

The purpose of the Data Editor is to make changes to average or sample data selected by site, parameter, and time frame. Annotations can be added to data points, also flags with colors, AQS codes and MDL codes. Data values can be edited, invalidated, or restored from raw data. In the data editor selection screen (Figure 13), select a **Site, Parameters, Average** or **Sample Data, Data Average Type** (e.g., 001h=one hour, 001m=one minute), beginning and ending **Date** and time, then click **Edit Selected Data**. The data you selected will be displayed in the data editor (Figure 14) with parameters in columns and time in rows.

The following editing options are available at the top of the data editor display screen (Figure 14):

- **Select All**
- **Batch Edit**
- **Annotations**
- **Invalidate**
- **Apply MDL Codes**
- **Restore from Raw**.

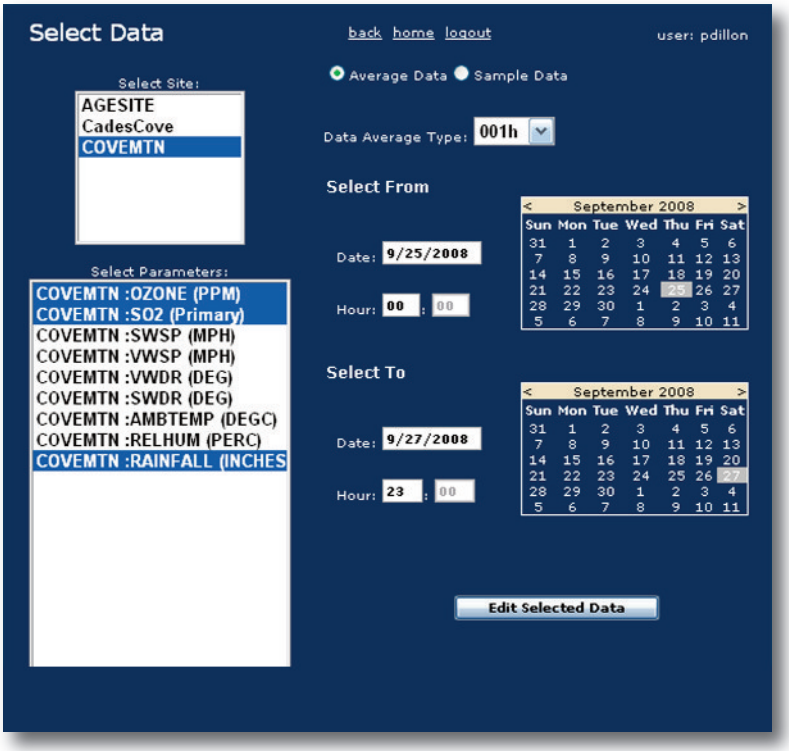


Figure 13 Data Editor selection screen

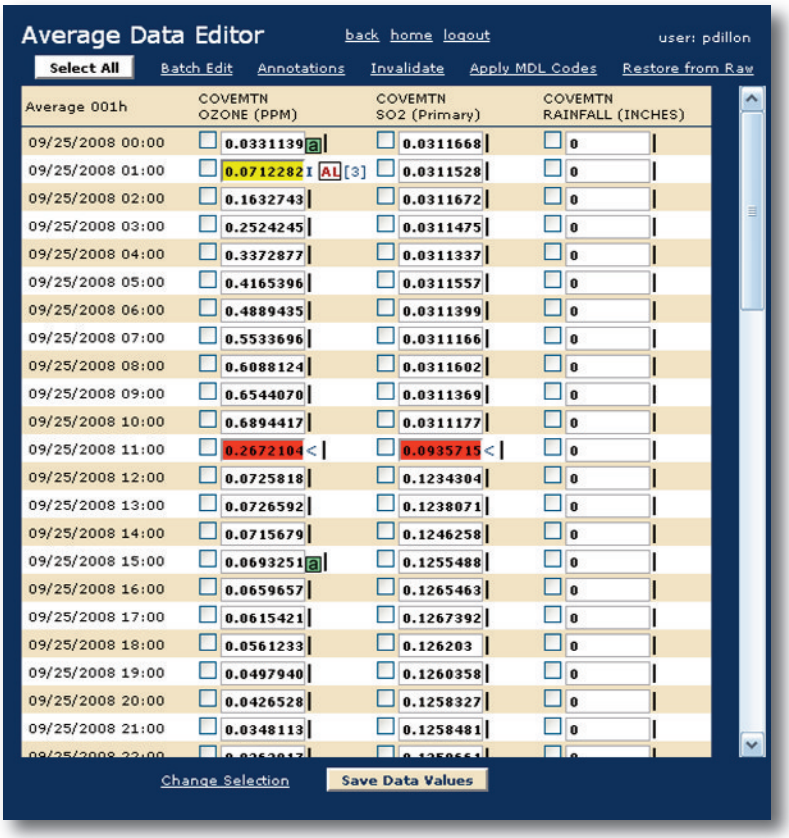


Figure 14 Data Editor displaying average data values

To attach notes to data, select data point or points and click **Annotations**. Select the **New** radio button to enter a note (Figure 15), or select **Edit** to append an additional note to a previous one for the same data point (Figure 16). If the data point to be edited has been edited previously, you will see a drop down list to **Select Annotation to Edit**. Once an annotation has been saved it cannot be changed, only appended. Annotated data will have an **a** flag; data that has been annotated and then edited will have an **a+** flag. To see an annotation, hold the cursor over an **a** flag (Figure 17).

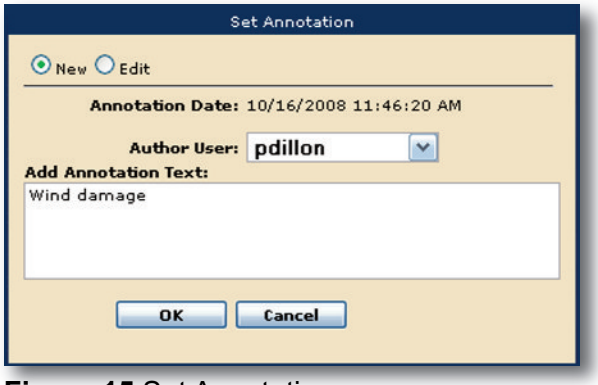


Figure 15 Set Annotation screen

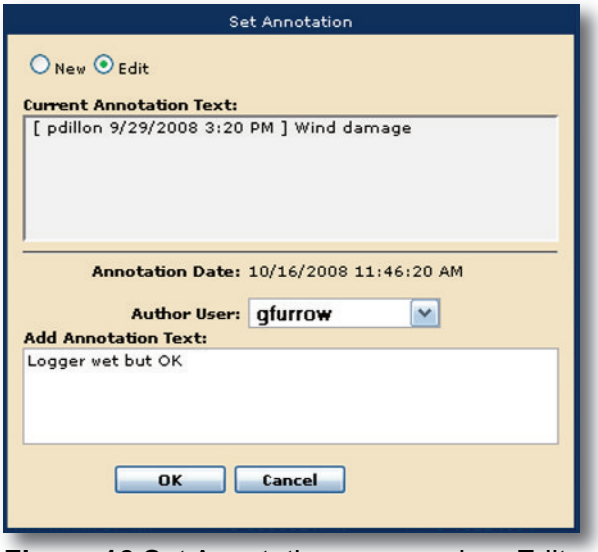


Figure 16 Set Annotation screen when Edit is selected

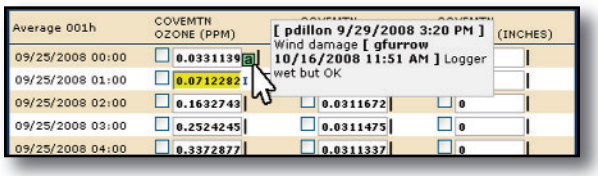


Figure 17 Annotation mouse over

To **Batch Edit**, first select data points, then click **Batch Edit**. Editing will be applied to selected data only; click in a checkbox beside data values to select single or multiple data points, or click **Select All** to select/deselect all data. (If you don't select any data, the batch editor will give you the error message "No data is selected.") In the Batch Editor (Figure 18) you can:

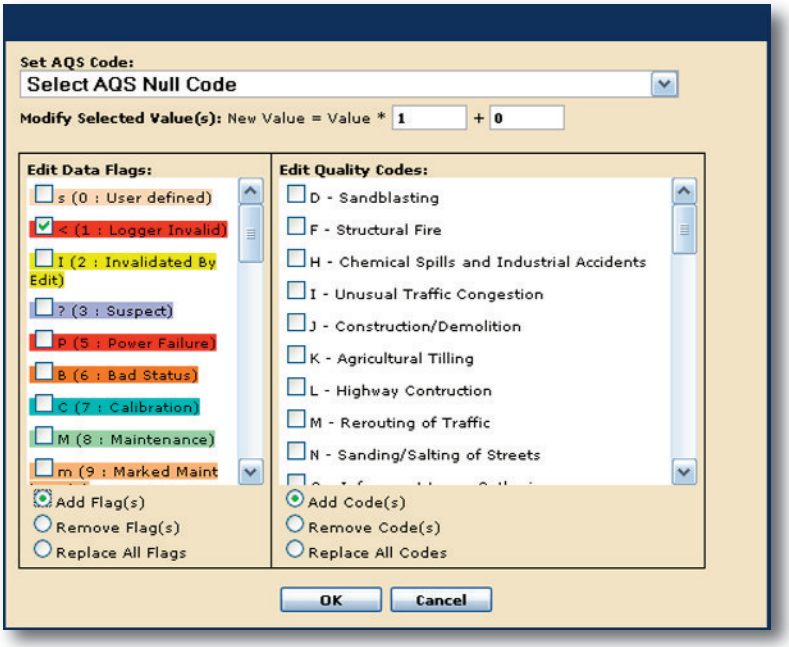


Figure 18 Batch Editor

- Set **AQS Codes** from a drop-down list, or select **Remove AQS Null Code** from the list
- **Modify Selected Values** according to the formula New Value = Value * (user-defined) + (user-defined)--defaults to New Value = Value * 1 + 0
- **Edit Data Flags** by adding, removing, or replacing flag(s) and color(s) to data. Flag colors are defined in the AirVision Flag Editor (Configuration Editors).
- **Edit Quality Codes** by adding, removing, or replacing codes.

Click **OK** in the batch editor to return to the data editor (Figure 14) with changes. Colors will not be displayed in the data editor and changes will not be saved to the database until you click **Save Data Values** in the data editor near the bottom of the screen (you may have to scroll to see it).

Click **Change Selection** (Figure 14) to select data for a different time period.

To invalidate data, select data points or click Select All, then click **Invalidate** at the top of the data editor (Figure 14).

To restore data from the raw database, select data and click **Restore from Raw** at the top of the data editor (Figure 14).

Data values will be returned to unedited values.

To apply MDL Codes (Minimum Detection Limit), select data and click **Apply MDL Codes**. Instrument Detection Limit {IDL), Minimum Detectable Limit (MDL), and Practical Quantization Limit (PQL) must all be configured in AirVision before applying MDL codes. (If detection limits have not been configured in AirVision for that parameter you will get an error message telling you which limits to configure.) Data values will be flagged according to the following EPA guidelines (Figure 19):

If Concentration is	Value to Report	Flag Applied
LOQ	Value	None
PQL ≤ LOQ	Value	7
MDL ≤ PQL	Value	PQ
IDL ≤ MDL	Value	MD
≤ IDL	0	9

Figure 19 MDL flag table

Changes will be saved to the database when you click **Save Data Values**.

P & A (PARS) Editor

Precision and Accuracy (P & A), formerly Precision and Accuracy Reporting System (PARS), is a utility that allows administrative personnel to create data records that are used later to submit RA (accuracy) and RP (precision) records to the Air Quality System (AQS). P&A is collected to ensure that data collected at monitoring sites is of high quality. Systems of checks produce data that reflects the results of these evaluations. Data edited in the PARS Editor will not be published on the public website; the PARS Editor is a tool for administrative access only.

PARS Precision Editor

Precision checks are determined by performing repeated measurements of ambient-level "calibration" gases at two-week intervals for continuous analyzers, or by obtaining duplicate results from collocated samplers for manual methods. The Precision Data record is uniquely identified by the combination of monitor and date.

Precision records have a single value for each record representing Actual and Indicated values with Indicated values coming from a co-located sampler/analyzer similar to the primary (actual reading) analyzer. The Precision Report displays a daily listing of reported precision data in a tabular format. The report displays the sample values entered into the system and then calculates a percent difference between the reported values, consistent with the requirements of OAQPS (Office of Air Quality Planning and Standards) Quality Assurance guidelines.

The PARS Precision Editor (Figure 20) lists parameters in a table along with their **Duration Code**, **Precision Check Date**, and **Precision Identifier Number**. The parameter that is selected (by clicking **Select** in the left column of the table) will be displayed below the table with the following information:

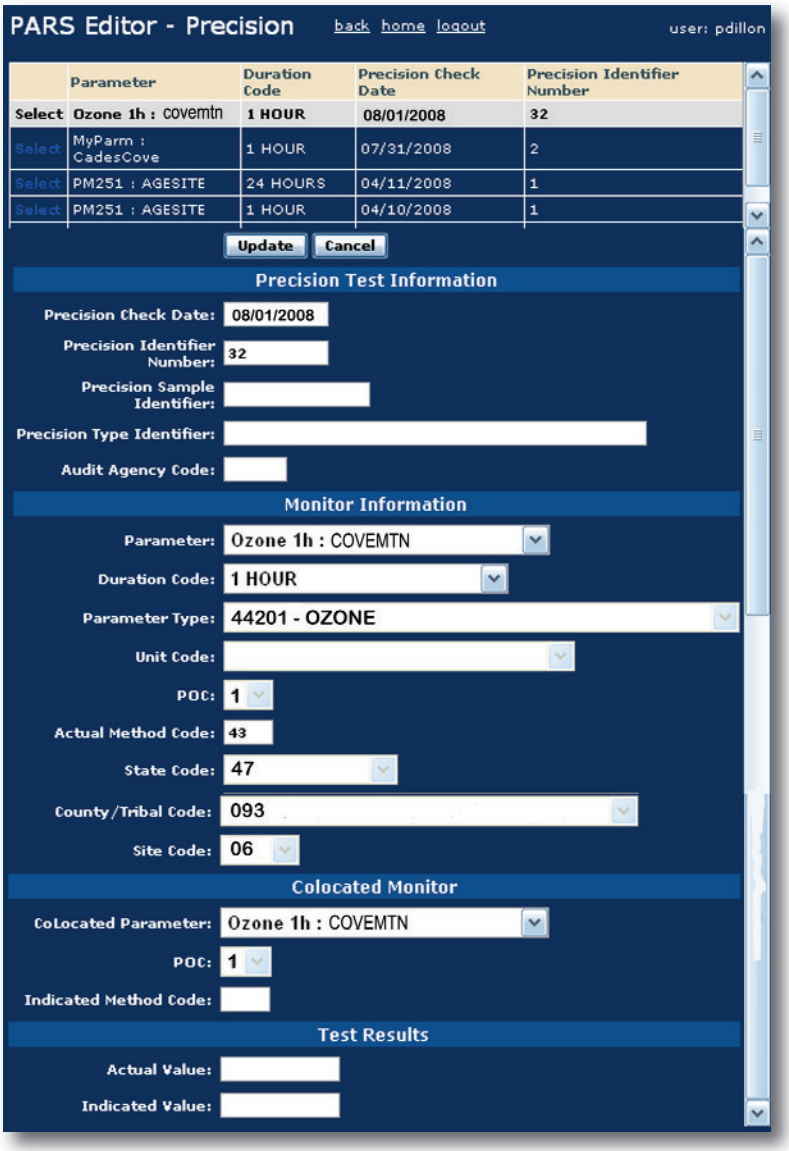


Figure 20 PARS Precision Editor

Precision Test Information

- Precision Check Date: The calendar date of the accuracy audit information
- Precision Identifier Number: A sequentially assigned number used to identify a particular precision check from others when multiple checks are performed on the same day
- Precision Sample Identifier: The unique identity (ID) number of the reference sample used to challenge the instrument
- Precision Type Identifier: Describes the type of precision test performed
- Audit Agency Code: Agency responsible for the monitor

Monitor Information

- Parameter: The code assigned to the parameter measured by the monitor. (A “monitor” in AQS represents not a device but the pollutant measured by a device.) Parameters may be pollutants or non-pollutants.
- Duration Code: The length of time (interval) used to acquire raw samples that are analyzed by monitors
- Parameter Type: A description of the type of parameter (e.g., ozone)
- Unit Code: AQS code for the standard parameter unit (e.g., ppm)
- POC: Parameter Occurrence Code (or Pollutant Occurrence Code), an identifier used to distinguish between multiple monitors at the same site that are measuring the same parameter. For example, the first monitor established to measure carbon monoxide (CO) at a site could have a POC of 1. If an additional monitor is established at the same site to measure CO, that monitor could have a POC of 2. However, if a new instrument is installed to replace the original instrument (POC 1), the replacement instrument would be considered the same monitor and it would still have a POC of 1.

  For criteria pollutants, data from different sampling methods should only be stored under the same POC if the sampling intervals are the same and the methods are reference or equivalent. For sites where duplicate sampling is being conducted by multiple agencies or by one agency with multiple samplers, multiple POCs must be utilized to store all samples.

  For non-criteria pollutants, data from multiple sampling methods can be stored under the same POC if the sampling intervals are the same and there is only one sample for the time reported. If multiple open path monitors are reporting data for the same parameter, each open path would be assigned a different POC.
- Actual Method Code: Identifies the particular method for collecting and analyzing a precision check value
- State Code: A Federal Information Processing Standards (FIPS) code that identifies one of the 50 states, U. S. territories, Washington, DC, or foreign countries. For batch loading data formats only, it may be set to “TT” to indicate that the County Code/Tribal Code field contains a Tribal Code.
- County/Tribal Code: A Federal Information Processing Standards (FIPS) code that identifies a county, or other geo-political entity, such as tribe, parish or independent city. For foreign countries, it identifies the geo-political equivalent to U. S. states, such as Mexican states or Canadian provinces.

- Site Code: A numeric identifier (ID) that uniquely identifies each air monitoring site within a county, and if it is a tribal site, within all counties included in a tribal area. There is no requirement that Site IDs be assigned in any particular order. Regional or local organizations can allocate Site IDs in any way they choose, as long as there is no duplication within a county or the counties that include a common tribal area.

  A specific Site ID is associated with a specific physical location and address. Any change in address requires a new Site ID to be assigned. This address change could include a change from the roof of one building to another. A change in location on the same roof should not normally require a new Site ID. Although an address change would routinely mean a new Site ID, some changes that do not change the site's location in respect to surrounding sources and its measurement scale would require no change. An EPA regional office should be consulted for assistance in determining whether a new site ID is required.

  If a new Site ID is needed for a site not operated by the air pollution control agency, that agency should be contacted to assist in the ID assignment, to ensure that the ID is unique within the county and, if appropriate, the adjoining counties sharing a common tribal area. In other words, when a new Site ID is assigned, it must be different from any other Site ID already existing for that combination of State Code and County Code and Tribal Area.

Collocated Monitor

- Collocated Parameter: The code assigned to the duplicate sampler that is paired with the primary monitor (i.e., routine monitor) to determine precision and accuracy data
- Collocated POC: The Parameter Occurrence Code (POC) of the duplicate sampler. Only applies to collocated data where the duplicate value is a recorded daily raw data point.
- Indicated Method Code: Identifies the particular method for collecting and analyzing a precision check value.

Test Results

- Actual Value: For precision and accuracy data the actual value is the concentration produced from the primary sampler (i.e., routine monitor) in a collocated sampler pair.
- Indicated Value: The measurement recorded by a monitor for a standard gaseous concentration with which it has been challenged.

PARS Accuracy Editor

Accuracy assessments indicate the agreement between an analyzer measurement and a known audit standard concentration for continuous analyzers, or the agreement between an observed value and a known or reference value for manual methods. Accuracy Data record is uniquely identified by the combination of monitor, audit class, accuracy type, date, and Accuracy Audit ID Number.

Accuracy records are similar to calibration--up to five runs that categorize “Actual” values and “Indicated” values. Actual values are from the primary analyzer, while Indicated values are from some other external reference device. The Accuracy Report provides an output of raw accuracy value pairs and their percent differences. The data is grouped by Parameter, Tribal Area or State, and Reporting Organization.

The PARS Accuracy Editor (Figure 21) lists parameters in a table along with their **Duration Code**, **Accuracy Date**, and **Accuracy Audit Number**. The parameter that is selected (by clicking **Select** in the left column of the table) will be displayed below the table with the following information:

Accuracy Test Information

- Accuracy Date: The calendar date for which the accuracy audit information pertains.
- Accuracy Audit Number: A sequentially assigned number used to identify a particular precision check from others, when multiple checks are performed on the same day
- Accuracy Type: A description of the type of accuracy test performed
- Local Primary Standard: A description of the source of the local primary standards
- Local Standard Expiration Date: The expiration date for the local primary standard
- Audit Sample Identifier
- Audit Scheduled Date
- Audit Type: Description of who performed the audit and how the audit standard was certified
- Audit Class: Description of the class of audit taken at the monitor
- Audit Type: Description of who performed the audit and how the audit standard was certified

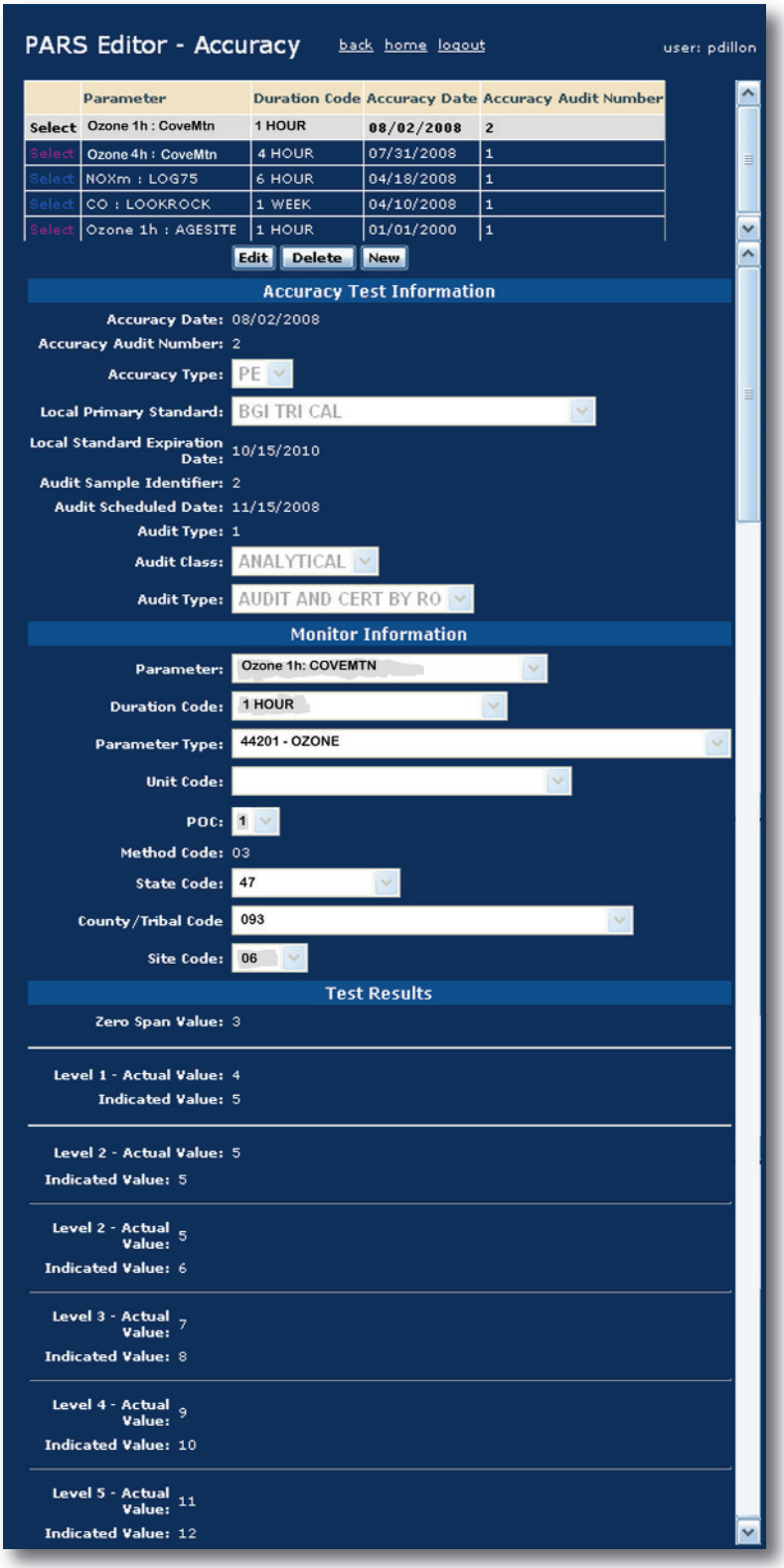


Figure 21 PARS Accuracy Editor

Monitor Information

- Parameter: The code assigned to the parameter measured by the monitor. (A “monitor” in AQS represents not a device but the pollutant measured by a device.) Parameters may be pollutants or non-pollutants.
- Duration Code: The length of time (interval) used to acquire raw samples that are analyzed by monitors
- Parameter Type: A description of the type of parameter (e.g., ozone)
- Unit Code: AQS code for the standard parameter unit (e.g., ppm)
- POC: Parameter Occurrence Code or Pollutant Occurrence Code, an identifier used to distinguish between multiple monitors at the same site that are measuring the same parameter. For example, the first monitor established to measure carbon monoxide (CO) at a site could have a POC of 1. If an additional monitor were established at the same site to measure CO, that monitor could have a POC of 2. However, if a new instrument is installed to replace the original instrument used as the first monitor, that would be the same monitor and it would still have a POC of 1.

  For criteria pollutants, data from different sampling methods should only be stored under the same POC if the sampling intervals are the same and the methods are reference or equivalent. For sites where duplicate sampling is being conducted by multiple agencies or by one agency with multiple samplers, multiple POCs must be utilized to store all samples.

  For non-criteria pollutants, data from multiple sampling methods can be stored under the same POC if the sampling intervals are the same and there is only one sample for the time reported. If multiple open path monitors are reporting data for the same parameter, each open path would be assigned a different POC.
- Method Code: Identifies the particular method for collecting and analyzing a precision check value
- State Code: A Federal Information Processing Standards (FIPS) code that identifies one of the 50 states, U. S. territories, Washington, DC, or foreign countries. For batch loading data formats only, it may be set to “TT” to indicate that the County Code/Tribal Code field contains a Tribal Code.
- County/Tribal Code: A Federal Information Processing Standards (FIPS) code that identifies a county, or other geo-political entity, such as tribe, parish or independent city. For foreign countries, it identifies the geo-political equivalent to U. S. states, such as Mexican states or Canadian provinces.
- Site Code: A numeric identifier (ID) that uniquely identifies each air monitoring site within a county, and if it is a tribal site, within all counties included in a tribal area. There is no requirement that Site IDs be assigned continuously or in any particular order. Regional or local organizations are thus free to allocate Site IDs in any way they choose, as long as there is no duplication within a county or the counties that include a common tribal area.
- A specific Site ID is associated with a specific physical location and address. Any change in address requires a new Site ID to be assigned. This address change could include a change from the roof of one building to another. A change in location on the same roof should not normally require a new Site ID. Although an address change would routinely mean a new Site ID, some changes that do not change the site's location in respect to

surrounding sources and its measurement scale would require no change. An EPA regional office should be consulted for assistance in determining whether a new site ID is required.

If a new Site ID is needed for a site not operated by the air pollution control agency, that agency should be contacted to assist in the ID assignment, to ensure that the ID is unique within the county and, if appropriate, the adjoining counties sharing a common tribal area. In other words, when a new Site ID is assigned, it must be different from any other Site ID already existing for that combination of State Code and County Code and Tribal Area.

Test Results

- Zero Span Value: A measurement obtained with gas from a zero concentration. Zero span is the observed value read from the instrument when the concentration of the specific parameter used to test the monitor was zero.
- Levels 1-5--Actual Value: For precision and accuracy data the actual value is the concentration produced from the primary sampler (i.e., routine monitor) in a collocated sampler pair.
- Levels 1-5--Indicated Value: The measurement recorded by a monitor for a standard gaseous concentration with which it has been challenged.

File Import Tool

With AgileWeb you can import CSV data directly from the database on your polling computer or you can save CSV data to a disk and import from there. AgileWeb allows your agency to have full interface to National Environment Internet Exchange Network (NEIEN) Exchange Nodes. This Exchange Network is a partnership among states, tribes, and the U.S. Environmental Protection Agency that is revolutionizing the exchange of environmental information. Partners on the Exchange Network share data efficiently and securely over the Internet. This new approach is providing real-time access to higher quality data while saving time, resources, and money for partner states, tribes, and territories.

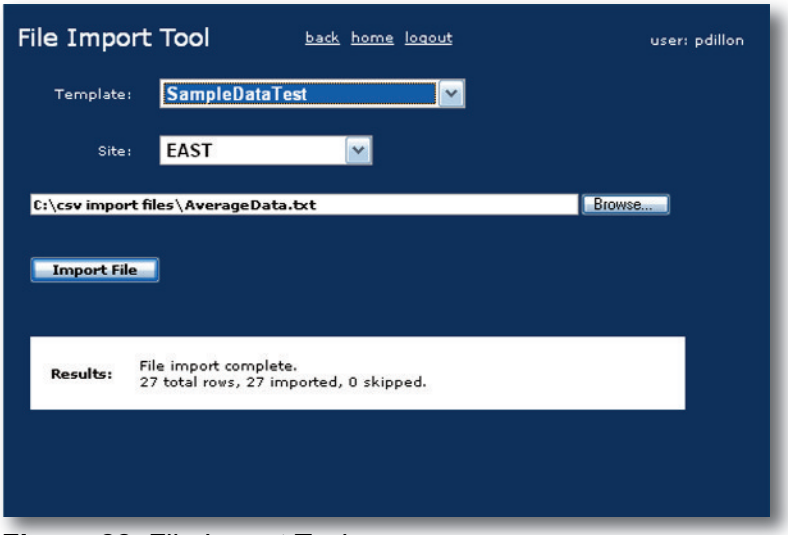


Figure 22 File Import Tool

Before data can be imported into AgileWeb, the **File Import Template** and the **Parameter Templates** for the **Site** must be configured in **AirVision**. After these are configured, select **Import Data** from the **Administration** menu. In the **File Import Tool** (Figure 22) select the **AirVision Site** and **File Import Template**. **Browse** to find the CSV file to import and click **Import File**. The message box will display the **Results**. If the import could not be made, the reason will be displayed.

Appendix: Security and SSL Certificates

Administrative personnel who log in to your website will need a login name and a password. In order for login names and passwords to be encrypted, you will need an SSL (Secure Sockets Layer) Certificate for each computer. SSL technology protects your website in the following ways:

1. An SSL Certificate enables encryption of sensitive information during online transactions.
2. Each SSL Certificate contains unique, authenticated information about the certificate owner.
3. A Certificate Authority verifies the identity of the certificate owner when it is issued.

An SSL Certificate establishes a private communication channel enabling encryption of the data during transmission. Encryption scrambles the data, creating message privacy. Each SSL Certificate consists of a public key and a private key. The public key is used to encrypt information and the private key is used to decipher it. When a Web browser points to a secured domain, an SSL handshake authenticates the server (your website) and the client (administrators' web browser).

If you don't have a valid SSL certificate on your server, you can buy one issued by a third party Certificate Authority, or you can create a self-signed SSL certificate using a tool called SelfSSL which comes with IIS 6.0 Resource Kit Tools. You can download IIS 6.0 Resource Kit Tools from microsoft.com.

1 After you download the **iis60rkt.exe** file from from Microsoft, double-click the file to bring up the **InstallShield Wizard** Click **Next** in the first screen.

2. In the second screen, select **I Agree** and click **Next**.

3. Enter a **User Name** and a **Company Name** and select whether **Anyone** or **Only the User Specified** can use the application. Click **Next**.

4. Select **Custom** installation if you only want to install SelfSSL, or choose **Complete** to install all features. Click **Next**.

5: Browse to select the **Destination Folder** for the installation and click **Next**.

6: If you chose the Custom option in step 4, select **SelfSSL** and click **Next**.

7: Review your settings and click **Next**.

8: Click **Finish** to complete the installation.

Once you have successfully installed, click on **Start > All Programs > IIS Resources > Self-SSL > SelfSSL** to run the SelfSSL utility. You should see the command prompt along with help instructions).

If you type selfssl.exe and press enter, it would use the default settings to install the SSL certificate which are equivalent to:

/N:CN=<YOUR COMPUTER NAME> (common name of the certificate)

/K:1024 (key length of the certificate)

/V:7 (validity of the certificate in days)

/S:1 (ID of the site to which the certificate needs to be installed)

/P:443 (SSL port)

Type **selfssl.exe** and press enter, then type **Y** to answer the question “Do you want to replace the SSL settings for site 1 (Y/N). Press enter again to confirm the installation.

The most important option here is the **site id**--SelfSSL uses the site id 1 by default which maps to "Default Web Site".

To find the site id for any website in IIS 6.0 you can execute **iisweb.vbs /query "<NAME OF THE WEBSITE>"** from command prompt.

Once that is run, go into IIS open up the website, agileweb virtual directory, and select the login.aspx file in the login directory.

Right-click **Properties**.

Select **File Security**.

Click **Edit** in the **Secure Communications** field.

Select **Require secure channel (SSL)** and click **OK**..

Click **OK** again.

Restart **IIS**.

This is the free way to set up a valid SSL certificate on your server, but it will give you security warnings in your web browser. If you don’t want to see that warning you will need to purchase a signed certificate from Verisign, eTrust, Comodo or some other provider.